

## A Surface-Mounted Rotor State Sensing System, Phase I

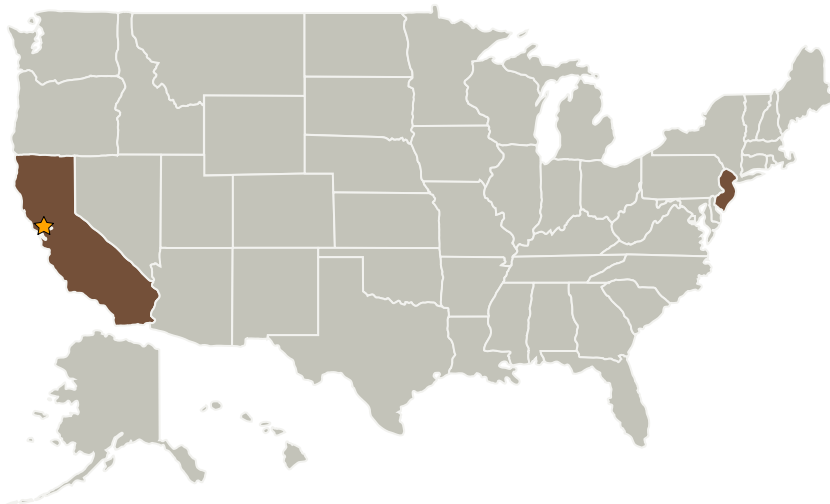
Completed Technology Project (2009 - 2009)



## Project Introduction

A surface-mounted instrumentation system for measuring rotor blade motions on rotorcraft, for use both in flight and in wind tunnel testing, is proposed for development. The technology builds upon previous Navy- and NASA-sponsored SBIR work in the design of a system for measuring rotor blade motion and loads, by combining several separate measurement technologies into a single instrumentation unit. The device may be applied onto the underside of any rotor system, and has a sufficiently small weight and form factor to minimize any impact on either blade aerodynamic or inertial properties. Data transfer to and from the unit is performed using optical telemetry, and power for the system is provided from self-contained conformal batteries. A novel feature of the new approach is the dual-use nature of the telemetry link to provide additional blade position measurements. These features eliminate the need for specialized rotor hub hardware for blade angle measurement or sliprings for power or data exchange, thus enabling its use on a wide range of rotor systems of interest to NASA and commercial customers.

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Continuum Dynamics, Inc.	Supporting Organization	Industry	Ewing, New Jersey



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## Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Management	2
Technology Areas	2

## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Center / Facility:**

Ames Research Center (ARC)

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

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### Primary U.S. Work Locations

California

New Jersey

### Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

### Technology Areas

**Primary:**

- TX14 Thermal Management Systems
  - └ TX14.2 Thermal Control Components and Systems
    - └ TX14.2.8 Measurement and Control